

On Premise Signs do not belong in Lighting Zones

A new challenge has been introduced for sign manufacturers and sign users everywhere, created in part by local municipalities and even some in the sign industry: Environmental Lighting Zones, or Lighting Zones. Never heard of Environmental Lighting Zones or Lighting Zones? The following article will give you a very brief overview of the Lighting Zones concept, and how it may or may not be appropriate for On Premise signs.

As the USSC Foundation already documented in the 2004 research project *Environmental Impact of On-Premise Sign Lighting*, the idea that outdoor lighting at night should be controlled and diminished in many cases has gained traction through the efforts of the International Dark-Sky Association. You may remember these folks: they wish to bring back the night sky, and so forth.

Concurrently, circa 2000/2001, an entity in the United Kingdom called the ILE (Institution of Lighting Engineers) proposed regulating sign lighting in Europe using a "lighting zone" scheme developed by the international lighting commission called CIE (Commission Internationale de l'Eclairage), which had developed the lighting zone classifications shown below to define areas of high and low ambient light.

E1: "Areas with intrinsically dark landscapes: National Parks, Areas of outstanding natural beauty (where roads usually are unlit)."

E2: "Areas of "low district brightness": outer urban and rural residential areas (where roads are lit to residential road standard)."

E3: "Areas of "medium district brightness": generally urban residential areas (where roads are lit to traffic route standards)."

E4: "Areas of "high district brightness"; generally urban areas having mixed residential and commercial land use with high night-time activity."

On this side of the Atlantic, the US-based IESNA (Illuminating Engineering Society of North America - now referred to as simply IES) created actual lighting level guidelines for outdoor lighting at night based on the Environmental Lighting Zones concept; this occurred in 2000. The work of IESNA was not directed toward illuminated signs or On Premise signs. It was focused solely on controlling the amount of light from lighting fixtures and luminaires that may extend to a property line or beyond; light that extends beyond the property line could be considered "light trespass" as it may be unwarranted or too bright. Controlling the lighting levels could help avoid this so-called light trespass. The term used to describe the amount of light that may fall on the ground or the property line is "illuminance".

Table 1. IESNA (2000c) recommended light trespass illuminance levels.

Environmental Zone	Illuminance (lx)
E1	1.0
E2	3.0
E3	8.0
E4	15.0

To be clear: IESNA studied roadway lighting to create its recommended illuminance levels for the (4) Lighting Zones; it did not study signs or On Premise signs or the amount of illumination that a Motorist needs to safely detect and read an On Premise sign at night.

Today, we have both national organizations and local municipalities attempting to regulate outdoor lighting at night, and they often include On Premise signs in this regulatory framework. This interest has been generated in large part by the appearance of LED EMCs (Electronic Message Centers) at night, particularly when they are not dimmed.

However, we have to stop and ask this very basic and fundamental question: is controlling the lighting level of an On Premise sign or LED EMC sign by limiting its Illuminance at the property line the correct way to control On Premise sign lighting? Does On Premise sign lighting need control? Will this give you a sign lighting level or brightness that is correct and appropriate for the Motorist in the interests of traffic safety? And the overwhelming response we have received here at the United States Sign Council is: no, controlling sign illumination by referencing Light Trespass standards makes no sense, and does not necessarily serve the needs of the Motorist. It's a matter of Apples and Oranges.

For example, the Town of Smithtown enacts an ordinance that limits the amount of lighting that may reach or fall on the property line from outdoor lighting at night to 0.3 Foot-candles, measured at the private property line. Signs are included. This means that a Sign Owner with 500' of lineal street frontage can have a very bright freestanding sign, and a Sign Owner with 30' of lineal street frontage may have to work to meet the standard, assuming the signs are of equal size and placed in the middle of the property frontage. And the recommended light trespass guidelines from IESNA or Dark Sky cannot tell you if either sign will have the correct lighting level for visibility and legibility.

Therefore, the USSC has serious questions and reservations about basing any On Premise sign lighting controls or LED EMC dimming standards on "environmental lighting zones". We believe that On Premise signs of all types should be exempt from any Lighting Zone regulation, or a different metric must be established to measure On Premise sign lighting; this will probably involve measuring sign Luminance, or brightness.

We recognize that concept of Environmental Lighting Zones or Lighting Zones is being used extensively by lighting professionals, but mainly in regard to bona fide outdoor lighting. On Premise signs, of any type, including LED EMCs, were not intended to be covered by the IES Lighting Zone recommendations. And, as representatives of the sign industry, we feel we should do everything

possible to prevent the application of the Lighting Zones to On Premise signs, as the consequences may have grave ramifications for all On Premise signs at night, not just LED EMCs.

On premise signs are not lighting fixtures or outdoor lighting devices and are not used to illuminate a task or area. The lighting is used to properly display protected First Amendment communication at night, at a lighting level that complies with the needs of the intended viewer, which is, in 99.9% of all cases, the Motorist. Any arbitrary diminution of On Premise sign illumination at night could interfere with this Communication, and could have serious traffic safety consequences for Motorists as well.

If the sign industry references Lighting Zones and suggests that they be used as a benchmark to regulate On Premise Signs or LED EMC signs at night, this may only encourage those outside the industry to think that the Lighting Zone concept should apply to On Premise signs. And in the real world, who determines whether a property is in Lighting Zone 2, 3 or 4? Won't every town want their districts designated as Zone 2, even if they are really Zone 3 or 4?

At the local level, Lighting Zones will create just more bureaucracy and potential for arbitrary abuse. If an Owner wants to challenge the Zone designation, what recourse does he or she have? Or will just more consultants and experts be needed to make a determination? And who will pay the fees?

Some readers may be aware that the Billboard industry has attempted to offer LED EMC lighting regulation guidelines for Digital Billboards and/or outdoor LED EMCs. The methodology used by OAAA fully embraces the notion that LED EMCs should have lighting levels at night determined by application of the "Lighting Zone" rules; in fact, Lighting Zone 2. It is an open question whether the Motorist's need in regard to On Premise sign lighting or LED EMC sign brightness is any different in Zone 2 or Zone 3 or Zone 4; should we encourage this distinction?

Professionals already confuse On Premise signs and Off Premise signs unfortunately– from a legal/constitutional perspective, from a traffic safety perspective, and from a public relations standpoint. However, there are fundamental differences. The way that the Motorist uses the information displayed on the signs is a primary difference. A Motorist must detect and read information on an On Premise sign and then execute a driving maneuver. A Motorist can detect and read an Off Premise Billboard, or not, and does not have to execute a driving maneuver; if the Off Premise sign happens to be not as bright as it should be, there is no traffic safety issue created. With On Premise signs, it is vital that the Motorist have the ability to detect and read the sign at night.

We therefore have a question as to whether the On Premise sign industry should in any way adopt or give approbation to a set of recommendations endorsed also by the OAAA. Unfortunately, Towns may adopt the OAAA standards and apply them to On Premise signs, without input from the On Premise sign industry. If the OAAA Lighting Zone 2 0.3 fc illuminance standard is adopted widely, then it is very likely that On Premise signs and On Premise LED EMC signs will be too dull or will not have the necessary brightness to perform their function.

Finally, a researcher at Penn State offered us this statement, which I will paraphrase: On premise Signs are an integral part of the wayfinding system that Motorists use to navigate from one point to

another safely. At night, this means that the message or copy, whether it be a standard internally illuminated sign cabinet or a LED EMC, has to have some type of illumination; otherwise, the sign is blank or black, and the Motorist cannot read the sign. We do not see a great demand by Lighting Control advocates to dim lighting on Airport runways, or dim traffic lights at intersections. They constitute a form of lighting at night of course. The main reason why you do not see this is: the illumination is a matter of public safety. The same holds true for On Premise signs that have lighting at night. If the Motorist cannot read the On Premise sign, or his or her ability to read the sign has been comprised by "dimming" the sign arbitrarily, then the needs of traffic safety have not been met.

Members should be aware that USSC has already performed substantial research regarding appropriate lighting levels for On premise signs at night, and these studies are a part of your membership package; please contact the USSC office if with any questions about these studies or On Premise sign lighting at night in general. You can contact the author directly at: rick@ussc.org.